Amendments to the Claims

Please amend Claims 9, 11-18, 20, 26, 28-35, 40, 45, 48, 50, 51, 61-64, 71-82, 84, 85, 89 and 90. Please cancel claims 1, 8, 10, 19, 25, 27, 42, 47 and 49. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1.   (Cancelled)

2.   (Currently Amended) The system according to Claim [[1]] 9 further comprising a DNS server, the DNS server:

  receives the client request from the client; and

  based on the client requests, forwards the client requests to the central server.

3.   (Original) The system according to Claim 2, wherein the DNS server interrogates candidate servers in the candidate server list.

4.   (Original) The system according to Claim 3, wherein the DNS server selects a candidate server based on the interrogation.

5.   (Original) The method according to Claim 4, wherein the DNS server:

  indicates to the selected candidate server that it has been selected to provide service to the requesting client; and

  returns the address of the selected candidate server to the client.

6.   (Original) The system according to Claim 3, wherein the DNS server returns to the requesting client the address of the first server to respond to the interrogation.

7.   (Original) The system according to Claim 6, wherein the DNS server transmits to the client a redirection packet to inform the selected server of being selected.

8.   (Cancelled)

9.   (Currently amended) ~~The system according to Claim 1, wherein~~ <u>A system for optimizing server selection for clients from among a plurality of servers in a packet communication network, the system comprising:</u>

        <u>a plurality of servers for alternatively responding to client requests;</u>

        <u>a central server that maintains server selection weights, and, based on the weights, provides in response to a client request a candidate server list of at least two candidate servers to a network node, other than the central server, adapted to interrogate individual servers represented in the candidate server list, the central server receiving feedback from the interrogated individual servers indicating service by the individual servers in response to client requests and modifying the server selection weights based on the feedback, the central server adds to the candidate server list an extra candidate server;</u>

        <u>wherein the extra candidate server is randomly selected; and</u>

        <u>wherein a number of servers in the candidate server list, including the candidate servers and</u> the extra, randomly selected, candidate server<u>,</u> is a fixed percentage <u>or a fixed number</u> beyond the number of servers selected based on the weights.

10.   (Cancelled)

11.   (Currently Amended) The system according to Claim [[1]] <u>9</u>, wherein each candidate server in the candidate server list is unique from each other candidate server in the list.

12.   (Currently Amended) The system according to Claim [[1]] <u>9</u>, wherein the feedback occurs according to at least one of the following: number of times the respective server is selected, duration from last feedback, time of day, or requested event.

13.   (Currently Amended) The system according to Claim [[1]] <u>9</u>, wherein the weights are based on bias factors to reduce convergence time, the bias factors including at least one

of: a number of times selected, moving average based on a specified amount of time, historical count information, time of day, time of year, calendar event, or geographical location.

14. (Currently Amended) The system according to Claim [[1]] 9, wherein the weights sum to one.

15. (Currently Amended) The system according to Claim [[1]] 9, wherein the central server includes vectors of server selection weights for subsets of clients.

16. (Currently AmendedThe system according to Claim [[1]] 9, wherein the central server includes multiple central servers organized as a distributed system.

17. (Currently Amended) The system according to Claim [[1]] 9, wherein the client interrogates the candidate servers in the candidate server list to measure at least one of the following: network performance between the client and candidate server, server congestion, or server load.

18. (Currently Amended) The system according to Claim [[1]] 9, wherein the candidates represented in the candidate server list are pseudo-randomly selected based on the weights.

19. (Cancelled)

20. (Currently Amended) The method according to Claim [[19]] 26 further including the step of forwarding the client request to the central server by a DNS server.

21. (Original) The method according to Claim 20, wherein the step of selecting a preferred server is executed by the DNS server.

22.　(Previously presented) The method according to Claim 21, further including, by the DNS server, the steps of:

　　　informing the selected server that it has been selected to provide service to the requesting client; and

　　　returning the address of the selected server to the client.

23.　(Original) The method according to Claim 21, further including, by the DNS server, the step of returning to the requesting client the address of the first server from which the probe is returned.

24.　(Original) The method according to Claim 23, wherein the DNS server transmits to the requesting client a redirection packet to cause the selected server to modify its respective service metric.

25.　(Cancelled)

26.　(Currently amended) ~~The method according to Claim 25, wherein~~ A method for optimizing server selection for clients from among a plurality of servers in a packet communication network, the method comprising:

　　　providing in response to a client request for a server address a candidate server list by a central server to a network node, other than the central server, adapted to interrogate individual servers represented in the candidate server list, the candidate server list including at least two server addresses selected based on weights corresponding to the candidate servers;

　　　selecting a preferred server from candidate server list;

　　　feeding back service metrics to the central server from the interrogated individual servers corresponding to service provided by the respective servers;

　　　updating the weights based on the service metric;

　　　adding to the candidate server list an extra candidate server;

　　　wherein the extra candidate server is randomly selected; and

wherein a number of servers in the candidate server list, including the candidate servers and the extra, randomly selected, candidate server, is a fixed percentage or a fixed number beyond the number of servers selected based on the weights.

27.   (Cancelled)

28.   (Currently Amended) The method according to Claim [[19]] 26, wherein each server represented in the candidate server selection list is unique from each other server represented in the list.

29.   (Currently Amended) The method according to Claim [[19]] 26 wherein the feedback occurs according to at least one of the following: number of times selected, duration from last feedback, time of day, or requested event.

30.   (Currently Amended) The method according to Claim [[19]] 26 wherein the weights are based on bias factors to reduce convergence time, the bias factors including at least one of: number of times selected, moving average based on length of recording time, historical count information, time of day, time of year, calendar event, or geographical location.

31.   (Currently Amended) The method according to Claim [[19]] 26 wherein the weights sum to one.

32.   (Currently Amended) The method according to Claim [[19]] 26 wherein the central server includes unique vectors of server selection weights for subsets of clients.

33.   (Currently Amended) The method according to Claim [[19]] 26 wherein the central server includes multiple central servers organized as a distributed system.

34.   (Currently Amended) The method according to Claim [[19]] 26 wherein ~~the step of~~ selecting the preferred server comprises ~~the step of~~ interrogating the servers to measure at least one of the following: network performance between client and server, server congestion, or server load.

35.   (Currently amended) By a central server in a packet communication network, a method for providing a client with a list of possible optimal servers from among a plurality of servers also on the network, comprising ~~the steps of~~:

maintaining weights corresponding to a plurality of servers;

in response to receiving a client request from a client, selecting a candidate server list of at least two candidate servers from among the servers represented by the weights;

providing the candidate server list to a network node, other than a network node selecting the candidate server list, adapted to interrogate individual servers represented in the candidate server list;

receiving feedback from the interrogated individual servers related to service by the servers for maintaining the weights; and

adding to the candidate server list an extra candidate server~~, independent of a server selection weight maintained for the added extra candidate server;~~

wherein the extra candidate server is randomly selected; and

wherein a number of servers in the candidate server list, including the candidate servers and the extra, randomly selected, candidate server, is a fixed percentage or a fixed number beyond the number of servers selected based on the weights.

36.   (Original) The method according to Claim 35 further including:

establishing a relationship with a DNS server to have the DNS server pass to the central server requests from clients for a server known by the central server.

37.   (Previously presented) The method according to Claim 35 wherein the extra candidate server is randomly selected.

38.   (Original) The method according to Claim 35 wherein the weights are based on bias factors to reduce convergence time, the bias factors including at least one of:

number of times selected, moving average based on length of recording time, historical count information, time of day, time of year, calendar event, or geographical location.

39.   (Original) The method according to Claim 35 wherein the central server includes unique vectors of weights for subsets of clients.

40.   (Currently Amended) A computer program product comprising:

a computer readable medium for storing data; and

a set of computer program instructions embodied on the computer readable medium, including instructions to:

maintain weights related to service provided by servers;

in response to receiving a request from a client, select a candidate server list of at least two candidate servers from among the servers represented by the weights based on the weights;

provide the candidate server selection list to a network node, other than a network node executing the instructions to select the candidate server list, adapted to interrogate individual servers represented in the candidate server list;

receive feedback from the interrogated individual servers to maintain the weights; and

add to the candidate server list an extra candidate server, ~~independent of a server selection weight maintained for the added extra candidate server~~;

wherein the extra candidate server is randomly selected; and

wherein a number of servers in the candidate server list, including the candidate servers and the extra, randomly selected, candidate server, is a fixed percentage or a fixed number beyond the number of servers selected based on the weights.

41. (Original) The computer program product according to Claim 40 further including instructions to:

  establish a relationship with a DNS server to have the DNS server pass to the central server client requests for a server known by the central server.

42. (Cancelled)

43. (Original) The computer program product according to Claim 40 wherein the probabilities are based on bias factors to reduce conversion time, including at least one of:

  number of times selected, moving average based on length of recording time, historical count information, time of day, time of year, calendar event, or geographical location.

44. (Original) The computer program product according to Claim 40 wherein the central server includes unique vectors of weights for subsets of clients.

45. (Currently amended) An apparatus for providing a client with a list of possible optimal servers from among a plurality of servers also on the network, the apparatus comprising:

  means for maintaining weights based on service by servers;

  means for receiving a request from a client;

  means for selecting a candidate server selection list of at least two candidate servers based on the weights from among the servers represented by the weights; and

  means for providing the candidate server selection list to a network node other than a network node including the means for selecting the candidate server selection list, adapted to interrogate individual servers represented in the candidate server list;

  means for receiving feedback from the interrogated individual servers; and

  means for adding to the candidate server list an extra candidate server[[,]] ~~independent of a server selection weight maintained for the added extra candidate server~~;

  wherein the extra candidate server is randomly selected; and

wherein a number of servers in the candidate server list, including the candidate servers and the extra, randomly selected, candidate server, is a fixed percentage or a fixed number beyond the number of servers selected based on the weights.

46.   (Original) The apparatus according to Claim 45 further comprising means for establishing a relationship with a DNS server to have the DNS server pass requests from clients for a server to the means for receiving a request from a client.

47.   (Cancelled)

48.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the one or more processors establishes a relationship with a DNS server to have the DNS server pass to the one or more processors requests from clients for a server known by the one or more processors.

49.   (Cancelled)

50.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the probabilities are based on bias factors to reduce convergence time, including at least one of:

       number of times selected, moving average based on length of recording time, historical count information, time of day, time of year, calendar event, or geographical location.

51.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the memory includes unique vectors of weights for subsets of clients.

52-60. (Cancelled)

61.   (Currently Amended) The system according to Claim [[1]] <u>9</u> wherein the network node adapted to interrogate individual servers is a client.

62.   (Currently Amended) The system according to Claim [[1]] <u>9</u> wherein the network node adapted to interrogate individual servers is a DNS server.

63.   (Currently Amended) The method according to Claim [[19]] <u>26</u> wherein the network node adapted to interrogate individual servers is a client.

64.   (Currently Amended) The system according to Claim [[19]] <u>26</u> wherein the network node adapted to interrogate individual servers is a DNS server.

65.   (Previously Presented) The method according to Claim 35 wherein the network node adapted to interrogate individual servers is a client.

66.   (Previously Presented) The system according to Claim 35 wherein the network node adapted to interrogate individual servers is a DNS server.

67.   (Previously Presented) The computer program product according to Claim 40 wherein the network node adapted to interrogate individual servers is a client.

68.   (Previously Presented) The computer program product according to Claim 40 wherein the network node adapted to interrogate individual servers is a DNS server.

69.   (Previously Presented) The apparatus according to Claim 45 wherein the network node adapted to interrogate individual servers is a client.

70.   (Previously Presented) The apparatus according to Claim 45 wherein the network node adapted to interrogate individual servers is a DNS server.

71.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the network node adapted to interrogate individual servers is a client.

72.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the network node adapted to interrogate individual servers is a DNS server.

73.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the extra candidate server is randomly selected.

74.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein each candidate server in the candidate server list is unique from each other candidate server in the list.

75.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein a feedback occurs according to at least one of the following: number of times the respective server is selected, duration from last feedback, time of day, or requested event.

76.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the weights are based on bias factors to reduce convergence time, the bias factors including at least one of: a number of times selected, moving average based on a specified amount of time, historical count information, time of day, time of year, calendar event, or geographical location.

77.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the weights sum to one.

78.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the servers includes vectors of server selection weights for subsets of clients.

79.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the servers includes multiple servers organized as a distributed system.

80.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the client interrogates the candidate servers in the candidate server list to measure at least one of the following: network performance between the client and candidate server, server congestion, or server load.

81.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the candidates represented in the candidate server list are pseudo-randomly selected based on the weights.

82.   (Currently amended) ~~The apparatus according to Claim 47 wherein~~ An apparatus for providing a client with a list of possible optimal servers from among a plurality of servers also on the network, the apparatus comprising:
        one or more processors coupled to memory storing weights related to service provided by a plurality of servers, said one or more processors executing a computer program to:
                maintain the weights;
                receive a request from a client;
                in response to the request, select a candidate server list of at least two candidate servers from among the servers represented by the weights;
                add to the candidate server list an extra candidate server;
        an interface coupled to the one or more processors and the network (i) to provide the candidate server list to a network node, other than a network node with the computer program to select a candidate server list, adapted to interrogate individual servers represented in the candidate server list and (ii) to receive feedback from the interrogated individual servers;
                wherein the extra candidate server is randomly selected; and

wherein <u>a number of servers in the candidate server list, including the candidate servers and</u> the extra, randomly selected, candidate server<u>,</u> is a fixed percentage <u>or a fixed number</u> beyond the number of servers selected based on the weights.

83. (Cancelled)

84. (Currently Amended) The system according to Claim [[1]] <u>9</u> wherein the network node determines from an interrogation of the individual servers, represented in the candidate server list, by the issued probes and the received responses, which of the individual servers is to service the client request.

85. (Currently Amended) The method according to Claim [[19]] <u>26</u> wherein selecting the preferred server from the candidate server list includes determining from an interrogation of the individual servers, represented in the candidate server list, by the issued probes and the received responses, which of the individual servers is to service the client request.

86. (Previously Presented) The method according to Claim 35 further comprising determining from an interrogation of the individual servers, represented in the candidate server list, by the issued probes and the received responses, which of the individual servers is to service the client request.

87. (Previously Presented) The computer program product according to Claim 40 further including instructions to determine from an interrogation of the individual servers represented in the candidate server list by the issued probes and the received responses, which of the individual servers is to service the client request.

88. (Previously Presented) The apparatus according to Claim 45 further comprising means for determining from an interrogation of the individual servers represented in the candidate server list by the issued probes and the received responses, which of the individual servers is to service the client request.

89.   (Currently Amended) The apparatus according to Claim [[47]] 82 wherein the one or more processors determines from an interrogation of the individual servers represented in the candidate server list by the issued probes and the received responses, which of the individual servers is to service the client request.

90.   (Currently Amended) The method according to Claim [[19]] 26, wherein the adding includes adding the extra candidate server without altering the weights of the candidate servers.